

REMARKS

This is a full and timely response to the non-final Office Action of February 13, 2003. Reexamination, reconsideration, and allowance of the application and all presently pending claims are respectfully requested.

Upon entry of this First Response, claims 1-51 are pending in this application. Claims 1, 9, 12, 15, 18, and 21-30 are directly amended herein, and claims 39-51 are newly added. It is believed that the foregoing amendments add no new matter to the present application.

Response to Double Patenting Rejections

1. Statutory Double Patenting

Claims 1, 7 (and 27), 15, 18 and 21 are provisionally rejected under 35 U.S.C. §101 as claiming the same invention as that of claims 1, 5, 7, 11, and 12 respectively of copending Application No. 09/715,253 (hereinafter referred to as "the '253 application"). Applicants respectfully traverse the foregoing double patenting rejections.

In this regard, it is asserted in M.P.E.P. §804(II)(A) that:

"In determining whether a statutory basis for a double patenting rejection exists, the question to be asked is: Is the same invention being claimed twice? 35 U.S.C. 101 prevents two patents from issuing on the same invention. ***"Same invention" means identical subject matter.*** *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1984); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957).

A reliable test for double patenting under 35 U.S.C. 101 is whether a claim in the application could be literally infringed without literally infringing a corresponding claim in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970). ***Is there an embodiment of the invention that falls within the scope of one claim, but not the other? If there is such an embodiment, then identical subject matter is not defined by both claims and statutory double patenting would not exist.*** (Emphasis added).

For at least the reasons set forth below, Applicants assert that, if the above test is properly applied in the instant case, it becomes readily apparent that claims 1, 7 (and 27), 15, 18 and 21

of the instant application do not respectively claim the same inventions as claims 1, 5, 7, 11 and 12 of the '253 application.

Regarding claim 1 of the instant application, Applicants assert that this claim does not claim the same invention as claim 1 of the '253 application. In particular, claim 1 of the '253 application recites features not recited in claim 1 of the instant application, and it is, therefore, possible for an embodiment of a graphical display system to infringe claim 1 of the instant application without infringing claim 1 of the '253 application. For example, claim 1 of the '253 application recites a "graphical pipeline" configured to "mathematically combine" an "offset" to "coordinate values" of "graphical data." Claim 1 of the instant application recites no such features. Thus, a graphical display system having a "graphical pipeline" that does not "mathematically combine" an "offset" to "coordinate values" of "graphical data" may infringe claim 1 of the instant application without infringing claim 1 of the '253 application. Therefore, claim 1 of the instant application and claim 1 of the '253 application do not claim the "same invention," and the provisional statutory double patenting rejection of claim 1 of the instant application is improper.

Similarly, each of the claims 5, 7, 11, and 12 of the '253 application recites an element or functionality that "mathematically combines" an "offset" to "coordinate values" of "graphical data," and claims 7 (and 27), 15, 18 and 21 of the instant application recite no such features. Thus, for at least the reasons set forth above, Applicants assert that it is possible for an embodiment of a graphical display system to infringe claims 7 (and 27), 15, 18 and 21 of the instant application without respectively infringing claims 5, 7, 11, and 12 of the '253 application. Therefore, the provisional statutory double patenting rejections of claims 7 (and 27), 15, 18 and 21 of the instant application are improper.

For at least the foregoing reasons, Applicants respectfully request that the provisional statutory double patenting rejections of claim 7 (and 27), 15, 18 and 21 of the instant application be withdrawn.

Furthermore, Applicants respectfully assert that a double patenting rejection based on the '253 application is improper until at least such application issues into a patent. Thus, Applicants request that the instant application be allowed to issue, notwithstanding the '253 application, once the instant application is otherwise within a condition for allowance pursuant to M.P.E.P. §822.01.

2. Obviousness-Type Double Patenting

It is asserted in the Office Action that "(c)laims 31-38 (are) provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 09/715,253." However, Applicants respectfully assert that, prior to the amendments set forth herein, the present application did not include claims 31-38. Thus, it is not clear which claims, if any, presently stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting. Clarification of the foregoing rejection is respectfully requested.

Response to §102(g) Rejections

In the Office Action, it is asserted that:

“Claims 1, 7 (and 27), 15, 18 and 21 are directed to the same invention as that of claims 1, 5, 7, 11 and 12 of commonly assigned Application No. 09/715,253. The issue of priority under 35 U.S.C. 102 (g) and possibly 35 U.S.C. 102(f) of this single invention must be resolved.

Since the U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP § 2302), the assignee is required to state which entity is the prior inventor of the conflicting subject matter. A terminal disclaimer has no effect in this situation since the basis for refusing more than one patent is priority of invention under 35 U.S.C. 102(f) or (g) and not an extension of monopoly.”

For at least the reasons set forth hereinabove in the arguments pertaining to the statutory double patenting rejections, Applicants respectfully traverse the above allegation that claims 1, 7 (and 27), 15, 18 and 21 are respectively directed to the same invention as claims 1, 5, 7, 11, and 12 of the ‘253 application. Accordingly, Applicants assert that it is not necessary for them to state which entity is the prior inventor of the allegedly conflicting subject matter.

Response to §102(e) Rejections

Claims 1, 15, 18, and 21 presently stand provisionally rejected under 35 U.S.C. §102(e) as allegedly anticipated by the ‘253 application. 35 U.S.C. §102(e) reads as follows:

“(e) the invention was described in—

(1) an application for patent, published under section 122(b), by another ***filed in the United States before the invention by the applicant for patent***, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another ***filed in the United States before the invention by the applicant for patent***, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351 (a)” (Emphasis added).

Thus, for a patent application or a patent to be a valid prior art reference under 35 U.S.C. §102(e), the patent application or patent must at least be “filed before” the instant application. Applicants respectfully assert that the ‘253 application and the instant application were filed on the same day. Thus, the ‘253 application was not “filed before” the instant application and, therefore, may not be used to reject the claims of the instant application under 35 U.S.C. §102(e).

For at least the foregoing reasons, Applicants respectfully assert that the provisional rejections of claim 1, 15, 18, and 21 under 35 U.S.C. §102(e) are improper and request that these rejections be withdrawn.

Response to §102(a) Rejections

A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. See, e.g., *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303, 313 (Fed. Cir. 1983).

Claim 1

Claim 1 presently stands rejected under 35 U.S.C. §102(a) as allegedly anticipated by *MacInnis* (U.S. Patent No. 6,501,480). Claim 1, as amended, reads as follows:

1. A graphical display system, comprising:
a first graphics pipeline configured to receive graphical data transmitted from a graphics application and to render said graphical data received by said first graphics pipeline;
a second graphics pipeline configured to receive graphical data transmitted from said graphics application and to render said graphical data received by said second graphics pipeline;
a display device configured to display an image; and
a compositor configured to receive said graphical data rendered by said first graphics pipeline and said graphical data rendered by said second graphics pipeline, said compositor further configured to interface said graphical received by said compositor with said display device, wherein said image is based on said graphical data rendered by said first graphics pipeline and said graphical data rendered by said second graphics pipeline. (Emphasis added).

Applicants respectfully assert that *MacInnis* fails to disclose at least the features of claim 1 highlighted above.

In this regard, it is asserted in the Office Action that *MacInnis* discloses two “graphics pipelines.” However, there is nothing in *MacInnis* to indicate that two alleged “graphics applications” receive and “render” graphical data transmitted from the same “graphics application.” Therefore, *MacInnis* fails to disclose a “first graphics pipeline configured to receive graphical data transmitted from a graphics application and to render said graphical data received by said first graphics pipeline” and a “second graphics pipeline configured to receive graphical data transmitted from said graphics application and to render said graphical data received by said second graphics pipeline,” as described by claim 1. (Emphasis added).

For at least the above reasons, Applicants assert that *MacInnis* fails to disclose each feature of pending claim 1, and the rejection of claim 1 under 35 U.S.C. §102(a) should, therefore, be withdrawn.

Claims 2-14, 31, 32, and 39-42

Claims 2-14, 31, and 32 presently stand rejected in the Office Action under 35 U.S.C. §102(a) as allegedly anticipated by *MacInnis*. Furthermore, claims 39-42 have been newly added via the amendments set forth herein. Applicants submit that the pending dependent claims 2-14, 31, 32, and 39-42 contain all features of their respective independent claim 1. Since claim 1 should be allowed, as argued hereinabove, pending dependent claims 2-14, 31, 32, and 39-42 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 15

Claim 15 presently stands rejected under 35 U.S.C. §102(a) as allegedly anticipated by *MacInnis*. Claim 15, as amended, reads as follows:

15. A graphical display system, comprising:
a first pipeline means for receiving graphical data transmitted from a graphics application and for rendering said graphical data received by said first pipeline means;
a second pipeline means for receiving graphical data transmitted from said graphics application and for rendering said graphical data received by said second pipeline means;
a means for displaying an image; and
a compositing means for receiving said graphical data rendered by said first pipeline means and said second pipeline means and for interfacing said graphical data received by said compositing means with said displaying means, wherein said image is based on said graphical data rendered by said first pipeline means and said graphical data rendered by said second pipeline means.
(Emphasis added).

For at least the reasons set forth hereinabove in the arguments for allowance of claim 1, Applicants submit that *MacInnis* fails to disclose at least the features of claim 15 highlighted hereinabove. Thus, the rejection of claim 15 under 35 U.S.C. §102(a) is improper and should be withdrawn.

Claims 16, 17, 33, and 34

Claims 16, 17, 33, and 34 presently stand rejected in the Office Action under 35 U.S.C. §102(a) as allegedly anticipated by *MacInnis*. Applicants submit that the pending dependent claims 16, 17, 33, and 34 contain all features of their respective independent claim 15. Since claim 15 should be allowed, as argued hereinabove, pending dependent claims 16, 17, 33, and 34 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 18

Claim 18 presently stands rejected under 35 U.S.C. §102(a) as allegedly anticipated by *MacInnis*. Claim 18, as amended, reads as follows:

18. A graphical display system, comprising:
a first graphics pipeline configured to render a first portion of graphical data included in a graphical command;
a second graphics pipeline configured to render a second portion of graphical data included in said graphical command;
a display device configured to display an image; and
a compositor configured to receive said first and second graphical data portions from said first and second graphics pipelines and to interface said first and second graphical data portions with said display device,
wherein a first portion of said image is based on said first graphical data portion and a second portion of said image is based on said second graphical data portion, and *wherein said first and second graphics pipelines render said first and second graphical data portions in parallel.* (Emphasis added).

Applicants respectfully assert that *MacInnis* fails to disclose at least the combination of features highlighted hereinabove for pending claim 18.

In this regard, it is alleged in the Office Action that *MacInnis* discloses:

“... a first graphics pipeline (Column 6, line 19-21) configured to receive graphical data and render said graphical data received by said first graphics pipeline; a second graphics pipeline configured to receive graphical data and to render said graphical data received by said second graphics pipeline...”

Applicants respectfully submit that there is nothing in *MacInnis* to indicate that the alleged “graphics pipelines” render “*in parallel*” graphical data from the *same* “graphical command.” Thus, *MacInnis* fails to disclose at least the combination of features of claim 18 highlighted hereinabove, and the rejection of claim 18 under 35 U.S.C. §102(a) is, therefore, improper and should be withdrawn.

Claims 19, 20, 35, and 36

Claims 19, 20, 35, and 36 presently stand rejected in the Office Action under 35 U.S.C. §102(a) as allegedly anticipated by *MacInnis*. Applicants submit that the pending dependent claims 19, 20, 35, and 36 contain all features of their respective independent claim 18. Since claim 18 should be allowed, as argued hereinabove, pending dependent claims 19, 20, 35, and 36 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 21

Claim 21 presently stands rejected under 35 U.S.C. §102(a) as allegedly anticipated by *MacInnis*. Claim 21, as amended, reads as follows:

21. A method for displaying graphical images, comprising:
receiving a graphical command, said graphical command including graphical data;
rendering, in parallel, a first portion of said graphical data via a first graphical pipeline and a second portion of said graphical data via a second graphical pipeline;
interfacing first and second rendered portions with a display device; and
displaying, via said display device, an image based on said first and second portions of graphical data. (Emphasis added).

For at least the reasons set forth hereinabove in the arguments for allowance of claim 18, Applicants submit that *MacInnis* fails to disclose at least the features of claim 21 highlighted hereinabove. Thus, the rejection of claim 21 under 35 U.S.C. §102(a) is improper and should be withdrawn.

Claims 22-30, 37, and 38

Claims 22-30, 37, and 38 presently stand rejected in the Office Action under 35 U.S.C. §102(a) as allegedly anticipated by *MacInnis*. Applicants submit that the pending dependent

claims 22-30, 37, and 38 contain all features of their respective independent claim 21. Since claim 21 should be allowed, as argued hereinabove, pending dependent claims 22-30, 37, and 38 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 43

Claim 43 has been newly added via the amendments set forth herein. Claim 35 presently reads as follows:

43. A graphical display system, comprising:
a first graphics pipeline;
a second graphics pipeline;
logic configured to receive graphical data defining a graphical object, the logic configured to control said first graphics pipeline such that said first graphics pipeline renders, based on said graphical data, a first portion of said graphical object without rendering a second portion of said graphical object, said logic further configured to control said second graphics pipeline such that said second graphics pipeline renders, based on said graphical data, said second portion of said graphical data without rendering said first portion; and
a compositor interfaced with said first and second graphics pipelines.

Applicants respectfully assert that the cited art fails to disclose or suggest each of the features of claim 43 set forth above. Accordingly, Applicants submit that claim 43 is allowable.

Claims 44-47

Claims 44-47 have been newly added via the amendments set forth herein. Applicants submit that the pending dependent claims 44-47 contain all features of their respective independent claim 43. Since claim 43 should be allowed, as argued hereinabove, pending dependent claims 44-47 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

Claim 48

Claim 48 has been newly added via the amendments set forth herein. Claim 48 presently reads as follows:

48. A graphical display method, comprising:
receiving graphical data defining a graphical object;
controlling a first graphics pipeline such that said first graphics pipeline renders a first portion of said graphical object without rendering a second portion of said graphical object;
controlling a second graphics pipeline such that said second graphics pipeline renders said second portion without rendering said first portion;
compositing said first and second portions; and
displaying a graphical image of said object based on said compositing.

Applicants respectfully assert that the cited art fails to disclose or suggest each of the features of claim 48 set forth above. Accordingly, Applicants submit that claim 48 is allowable.

Claims 49-51

Claims 49-51 have been newly added via the amendments set forth herein. Applicants submit that the pending dependent claims 49-51 contain all features of their respective independent claim 48. Since claim 48 should be allowed, as argued hereinabove, pending dependent claims 49-51 should be allowed as a matter of law for at least this reason. *In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).


CONCLUSION

Applicants respectfully request that all outstanding objections and rejections be withdrawn and that this application and all presently pending claims be allowed to issue. If the Examiner has any questions or comments regarding Applicants' response, the Examiner is encouraged to telephone Applicants' undersigned counsel.

Respectfully submitted ,

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ANNOTATED VERSION OF MODIFIED CLAIMS

TO SHOW CHANGES MADE

The following is a marked up version of the amended claims, wherein brackets denote deletions and underlining denotes additions.

1. (Once Amended) A graphical display system, comprising:

a first graphics pipeline configured to receive graphical data transmitted from a graphics application and to render said graphical data received by said first graphics pipeline;

a second graphics pipeline configured to receive graphical data transmitted from said graphics application and to render said graphical data received by said second graphics pipeline;

a display device configured to display an image; and

a compositor configured to receive said graphical data rendered by said first graphics pipeline and said graphical data rendered by said second graphics pipeline, said compositor further configured to interface said graphical received by said compositor with said display device, wherein said image is based on said graphical data [received by said compositor] rendered by said first graphics pipeline and said graphical data rendered by said second graphics pipeline.

9. (Once Amended) The system of claim 1, wherein:

said first graphics pipeline is configured to [receive graphical data transmitted from a graphics application and to] receive an input identifying a first coordinate range, said first graphics pipeline configured to discard, based on said first coordinate range, a first portion of said graphical data transmitted from said graphics application, said first portion associated with coordinate values outside of said first coordinate range; and

said second graphics pipeline is configured to [receive said graphical data transmitted from said graphics application and to] receive an input identifying a second coordinate range, said second graphics pipeline configured to discard, based on said second coordinate range, a second portion of said graphical data transmitted from said graphics application, said second portion associated with coordinate values outside of said second coordinate range.

12. (Once Amended) The system of claim 1, [further comprising a graphics application for producing] wherein said graphics application is configured to produce graphical data that defines an object within said image, wherein said graphical data rendered by said first graphics pipeline defines a first portion of said object and wherein said graphical data rendered by said second graphics pipeline defines a second portion of said object.

15. (Once Amended) A graphical display system, comprising:

a first pipeline means for receiving graphical data transmitted from a graphics application and for rendering said graphical data received by said first pipeline means;

a second pipeline means for receiving graphical data transmitted from said graphics application and for rendering said graphical data received by said second pipeline means;

a means for displaying an image; and

a compositing means for receiving said graphical data rendered by said first pipeline means and said second pipeline means and for interfacing said graphical data received by said compositing means with said displaying means, wherein said image is based on said graphical data [received by said compositing means] rendered by said first pipeline means and said graphical data rendered by said second pipeline means.

18. (Once Amended) A graphical display system, comprising:

a first graphics pipeline configured to render a first portion of graphical data included in a graphical command;

a second graphics pipeline configured to render a second portion of graphical data included in said graphical command;

a display device configured to display an image; and

a compositor configured to receive said first and second graphical data portions from said first and second graphics pipelines and to interface said first and second graphical data portions with said display device,

wherein a first portion of said image is based on said first graphical data portion and a second portion of said image is based on said second graphical data portion, and wherein said

first and second graphics pipelines [simultaneously] render said first and second graphical data portions[, respectively] in parallel.

21. (Once Amended) A method for displaying graphical images, comprising [the steps of]:

receiving a graphical command, said graphical command including graphical data;
[simultaneously] rendering, in parallel, a first portion of said graphical data via a first graphical pipeline and a second portion of said graphical data via a second graphical pipeline;
interfacing first and second rendered portions with a display device; and
displaying, via said display device, an image based on said first and second portions of graphical data.

22. (Once Amended) The method of claim 21, wherein said interfacing [step includes] comprises [the step of] processing said first and second rendered portions to form a set of graphical data, and wherein said processing [step including the step of] comprises enabling said display device to scan said set of graphical data.

23. (Once Amended) The method of claim 21, further comprising [the steps of]:
receiving an input from a user; and
selectively super-sampling one of said portions of said graphical data based on said input.

24. (Once Amended) The method of claim 21, further comprising [the steps of]:
receiving an input from a user; and
selectively discarding one of said portions of said graphical data based on said input.

25. (Once Amended) The method of claim 21, further comprising [the steps of]:
super-sampling said first portion of said graphical data via said first graphical pipeline;
super-sampling said second portion of said graphical data via said second graphical
pipeline; and
calculating data values included within said graphical data stored in said frame buffer
based on said super-sampled portions of said graphical data.

26. (Once Amended) The method of claim 21, further comprising [the step of]:
combining said first portion with said second portion to form said graphical data stored
in said frame buffer.

27. (Once Amended) The method of claim 21, further comprising [the step of]:
receiving a plurality of graphical commands at a third graphical pipeline;
determining which of said plurality of graphical commands include three-dimensional
graphical data;
transmitting from said third graphical pipeline to other graphical pipelines each of said
plurality of graphical commands determined to include three-dimensional graphical data;
rendering two-dimensional data from each of the remaining graphical commands via
said third graphical pipeline; and
interfacing said two-dimensional with said display device,

wherein said image displayed in said displaying [step] is based on said two-dimensional data stored in said frame buffer, and wherein said first and second graphics pipelines are included in said other graphical pipelines.

28. (Once Amended) The method of claim 27, wherein said first portion is included in one of said plurality of commands transmitted in said transmitting [step].

29. (Once Amended) The method of claim 21, further comprising [the steps of]:

identifying a first coordinate range;

identifying a second coordinate range;

discarding, via said first graphical pipeline and based on said first coordinate range, said second portion of said graphical data, said second portion associated with coordinate values outside of said first coordinate range; and

discarding, via said second graphical pipeline and based on said second coordinate range, said first portion of said graphical data, said first portion associated with coordinate values outside of said second coordinate range.

30. (Once Amended) The method of claim 29, further comprising [the steps of]:

super-sampling said first portion of said graphical data via said first graphical pipeline;

super-sampling said second portion of said graphical data via said second graphical pipeline; and

calculating data values included within said graphical data stored in said frame buffer based on said [super-sampling steps] super-sampled portions.